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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/685,042	10/10/2000	Shuichi Kobayashi	35.G2657	3110

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EXAMINER

HENRY, JON W

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 01/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/685,042

Applicant(s)

KOBAYASHI, SHUICHI

Examiner

Jon W. Henry

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 & 4. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The last two lines of claims 1 and 2 are unclear because it appears that almost any optical system receiving light from a field of view to two optical elements of any combination of powers reduce incident angle to the second elements for some ray of light. Claim 5 does much to clarify the intent of the claim language, but the term “a ray of off-axis primary light” is not a clear description of what appears intended to describe an off-axis primary ray passing through the center of the aperture stop (where an iris is located).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang.

It appears elements 13 and 5 of Yang are intended to be positive and negative power elements respectively and therefore such would have been obvious. Additionally, blazed

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structures would have been obvious because light of a single order would be desirable and blazed holograms are well known for achieving such. It would have been obvious to make elements 13 and 5 of different materials, and hence different dispersions, because many different hologram recording materials are known and mixing materials would therefore have been obvious.

5. Claims 1, 2, 4/1, 4/2, 7/1, and 7/2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (-706).

The relationship of claims 1 and 2 would be expected for at least one off-axis ray from distant objects for which the devices of Chen (-706) appear intended for use and therefore such would have been obvious. Additionally, it is conventional to blaze to concentrate one diffraction order and therefore such would have been obvious.

6. Claims 1-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (-314).

It would have been obvious to one of ordinary skill in the art to make the diffractive elements 26 of Fig. 5b and 70 of Fig. 6b of Chen (-314) positive because such is conventional in pure refractive similar systems. Additionally, both positive and negative field lenses of the type of 30 (Fig. 5b) and 74 (Fig. 6b) are commonly used in similar refractive systems and therefore the choice of negative would have been obvious. The relationship of claims 1 and 2 would be expected for at least one off-axis ray from distant objects for which the devices of Fig. 5b and Fig. 6b of Chen (-706) appear intended for use with positive, negative diffractive elements as deemed obvious previously, and therefore such would have been obvious.

Using different materials (with different dispersions) is conventional as an added degree of freedom to improve imaging and therefore such would have been obvious. Additionally, it is

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conventional to blaze to concentrate one diffraction order and therefore such would have been obvious.

7. Claims 1-7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spencer et al.

The relationship of claims 1 and 2 would be expected for at least one off-axis ray from distant objects for which the devices of Spencer appear intended for use, and therefore such would have been obvious.

Using different materials (with different dispersions) is conventional as an added degree of freedom to improve imaging and therefore such would have been obvious. Additionally, it is conventional to blaze to concentrate one diffraction order and therefore such would have been obvious.

8. Claims 1-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al.

The relationship of claims 1 and 2 would be expected for at least one off-axis ray from distant objects for which the devices Clark et al appear intended for use, and therefore such would have been obvious.

Using different materials (with different dispersions) is conventional as an added degree of freedom to improve imaging and therefore such would have been obvious. Additionally, it is conventional to blaze to concentrate one diffraction order and therefore such would have been obvious.

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Allowable Subject Matter

9. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter. The prior art does not teach or fairly suggest an optical system comprising all of the features, including the positive, negative and iris features of claim 9 and arranged, connected, and coordinated for operation as set out in that claim.

Conclusion

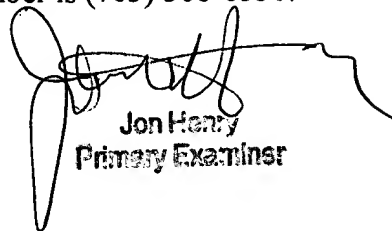
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patent documents to Ohmori et al, Kashima, Chipper, Kohno, Nagaoka, and Yamamoto et al are cited to show optical systems with plural diffractive elements in series.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon W. Henry whose telephone number is (703) 305-6106. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou, can be reached on (703) 308-1687. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

jwh
December 20, 2001



Jon Henry
Primary Examiner